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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,725	06/26/2003	Anthony P. Ewing	9129.109	2573

36412 7590 02/28/2006  
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401 WEST A STREET, SUITE 2400  
SAN DIEGO, CA 92101-7915

EXAMINER

SMITH, RUTH S

ART UNIT PAPER NUMBER

3737

DATE MAILED: 02/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/608,725

Applicant(s)

EWING ET AL.

Examiner

Ruth S. Smith

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 37 and 38 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-17 and 20-24 is/are allowed.
- 6) ☒ Claim(s) 25-36 is/are rejected.
- 7) ☒ Claim(s) 18-19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

### ***Election/Restrictions***

Applicant's election with traverse of the invention of Group I in the reply filed on January 30, 2006 is acknowledged. The traversal is on the ground(s) that the claims are directed to similar subject matter. This is not found persuasive because the apparatus does not include any means for predicting noise and eliminating the noise and the method fails to include a honeycomb support structure for supporting a SQUID containing liquid helium.

The requirement is still deemed proper and is therefore made FINAL.

Claims 37-38 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on January 30, 2006.

### ***Claim Objections***

Claims 18,19 are objected to because of the following informalities: In view of the amendment to claim 1, it is unclear as to what further limitation has been set forth in claim 18. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 25-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoenig in view of Dilorio et al, Zanakis et al. Hoenig discloses a concave headrest for a magnetoencephalography system. Dilorio et al disclose a conformable/adjustable structure (16) supporting a plurality of sensors (12) and providing close contact with

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variably shaped/sized heads (taking on the radius of curvature of the head placed in it) so as to obtain high-resolution signals (col. 9 lines 65- 69, col. 14 lines 13-25). It would have been obvious at the time the invention was made to a person of ordinary skill in the art to use the conformable/adjustable sensor support with multiple sensors as taught by Dilorio et al. in the invention as taught by Hoenig so as to obtain as close contact as possible with the sensor coils thereby obtaining high resolution signals. The modified headset would provide the dimensions set forth in the claims given the standard sizes used for heads. Hoenig and Dilorio et al. differ from the claimed invention in that a honeycomb configuration is not specifically addressed. In the same field of endeavor, Zanakis et al demonstrates that such a configuration (17) is well known to shield, and reduce vibration between, sensors (col. 7 lines 28-43). It would have therefore been obvious at the time the invention was made to a person of ordinary skill in the art to arrange the sensors of Hoenig in view of Dilorio et al. in a honeycomb configuration as is well known in the art and for the above described reasons. Further regarding claims 29 and 30, the support structure of Dilorio is composed of an insulating and structurally strong material such as fiberglass (functionally equivalent to G-10 fiberglass) as is commonly used (col. 5 line 65 - col. 6 line 17). It would have been obvious at the time the invention was made to a person of ordinary skill in the art to use a fiberglass support as taught by Dilorio et al. in the invention as taught by Hoenig as is well established in the art. Regarding claims 31 and 32, Hoenig differs in that a spacing of 1-3 mm between the sensors and the outer head engaging portion of the headrest is not specifically addressed. Dilorio et al. disclose wherein the support structure has a series of hollowed-out portions (fig. 13) so that the coils are separated from the outer head engaging surface by only a thin polymeric material (240) such as Mylar or cloth (col. 12 lines 11-15) (impliedly 1-3 mm). It would have been obvious at the time the invention was made to a person of ordinary skill in the art to arrange the sensors of Hoenig as close to the support as possible as taught by Dilorio et al. so as to achieve higher resolution and improved signal to noise ratio (col. 9 lines 65-69).

Claims 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoenig in view of Dilorio et al and Zanakis et al as applied to claim 25 above, and further in view of Yokosawa et al. Hoenig and Dilorio et al. differ from the claimed invention in that a pick-up coil having a small diameter and inter-coil spacing on the order of a few millimeters is not specifically addressed (although Dilorio et al. discloses thin film pick-up coils disposed on a substrate fig. 8-10). Yokosawa et al. teach an integrated-type dc SQUID magnetometer having as many as 200 sensors disposed about the head (fig. 6, col. 5 lines 8-21). Although Yokosawa et al. does not explicitly set forth the coil diameters and spacing, it is implied that they are on the order of a few millimeters or less with the use of 200 sensors - since it is disclosed that the substrate itself is around 30 x 40mm (col. 3 lines 10-14) as well as by virtue of the surface area of the patient's head itself. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to replace the sensor coils of Hoenig in view of Dilorio et al. with the smaller and more compact integrated-type SQUID magnetometer devices of Yokosawa et al. to form a more lightweight, cost-effective, and densely aggregated magnetometer with improved resolution.

#### ***Allowable Subject Matter***

Claims 1-17,20-24 are allowable over the prior art of record.


#### ***Response to Arguments***

Applicant's arguments with respect to claims 25-36 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ruth S. Smith whose telephone number is 571-272-4745. The examiner can normally be reached on M-F 7:30 AM-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ruth S. Smith  
Primary Examiner  
Art Unit 3737

RSS